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### Original Article

#### Detection of Mutation in 23S rRNA in Isolates of *Streptococcus pyogenes* Resistant to Erythromycin

Z Sepehrizadeh<sup>1,\*</sup>, G Zarrini<sup>2</sup>, M Bahrololoumi Shapourabadi<sup>1</sup>, M Tabatabaei Yazdi<sup>1</sup>,  
Hosseini shad<sup>1</sup> M

<sup>1</sup> Dept. of Pharmaceutical Biotechnology, Faculty of Pharmacy, Tehran University of Medical Sciences, Iran

<sup>2</sup> Dept. of Animal Sciences, Faculty of Natural Sciences/University of Tabriz, Iran

#### Corresponding Author:

G Zarrini

Fax: +98 411 3356027, E-mail: zarrini@tabrizu.ac.ir

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#### Abstract:

**Background:** In this study, erythromycin resistance isolates from the students with aged 12-15 yr old were studied and the mutations in the 23S rRNA were identified by sequencing.

**Methods:** Throat samples of 327 students with 12-15 years old from 3 schools of Tehran were cultured on the selective *Streptococcus pyogenes* medium and 23 strains were primarily selected as *S. pyogenes*.



**Results:** All strains were susceptible to penicillin and bacitracin (0.04U). Minimum inhibitory of concentrations (MICs) for erythromycin were determined in which 5 strains were found intermediate, 2 strains resistance and the remaining 16 strains susceptible to erythromycin. MIC for the erythromycin-resistance strains, BT<sub>3</sub> and BT<sub>4</sub>, were 8.2 and 12.4 µg/ml, respectively. PCR was performed for each six 23S rRNA operons and a fragment with 550 bp was sequenced. For two resistance strains, BT<sub>3</sub> and BT<sub>4</sub> there were a mutation in position 2059 (A to G). Also another mutation in position 2529 (G to A) was detected in BT<sub>3</sub>.

**Conclusion:** In addition to mutation at the position 2058 other point mutations in different positions of domain V involve in the resistance to macrolides.

#### Keywords:

*Streptococcus pyogenes* . 23S rRNA . erythromycin-resistance

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